MINING APPLICATION
N _____
Date _____

CLA SHAFT

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
1588 West North Temple
Salt Lake City, Utah 84116

NOTICE OF INTENTION TO COMMENCE MINING OPERATIONS
(See Rule M of General Rules and Regulations)

1. Name of Applicant or Company UNION CARBIDE CORPORATION, METALS DIVISION
Corporation (x) Partnership ( ) Individual ( )

2. Address P. O. Box 1029, Grand Junction, Colorado
Permanent Temporary

3. Name and title of person representing company Mel Pembridge

4. Address See (2) Office Phone 245-3700 - Ext. 218

5. Location of Operation San Juan County Sec. 32 5,6 T. T28S T29S R. R24E R24E

6. Name of Mine Hecla Shaft

7. Mineral to be mined:

( )	Coal	( )	Flagstone
( )	Copper	( )	Gravel
( )	Manganese	( )	Shale
( )	Iron Ore	(xx)	Uranium
( )	Phosphate	( )	Gilsonite
( )	Potash	( )	Bituminous Sandstone
( )	Fluorspar	( )	Tungsten
( )	Other (specify)		

Mining method:
Underground - Trackless, SINGLE SHAFT ENTRY, Random Room and Pillar, Mining conducted in a safe, sound, technical & prudent miner-like manner.

8. Have you or any person, partnership or corporation associated with you received an approved Notice of Intention to Commence Mining Operations by the State of Utah for operations other than described herein?
( ) Yes (x) No
If yes, list all approval numbers now under surety:

_____ _____ _____ _____
_____ _____ _____ _____
_____ _____ _____ _____

9. Owner/Owners of record of the surface area within the land to be affected:

Fred C. Markle	Address	25 Apache Circle Moab, Utah 84532
Redd Ranches Etal	Address	La Sal, Utah 84530
San Juan County	Address	% County Clerk Monticello, Utah 84535
State of Utah ML-24092	Address	Utah Division of State Lands 105 State Capitol Blvd. SLC. Ut. 84114
Union Carbide		Box 1029, Grand Junction, CO 81501

10. Owner/Owners of record of minerals to be mined:

State of Utah	Address	Utah Div. of State Lands 105 State Capitol Blvd., SLC, UT 84114
San Juan County	Address	% County Clerk Monticello, Utah 84535
Union Carbide	Address	Box 1029 Grand Jct, CO 81501
Superior Uranium Corp.	Address	P.O. Box 733, Provo, Utah 84601

11. Owner/Owners of record of all other minerals within any part of the land affected:

Union Carbide - Hecla - Joint Venture

Utah State	Address	
San Juan Co.	Address	
	Address	

11a. Have the above owners been notified in writing?
( ) Yes (X) No

12. Source of Operator's legal right to enter and conduct operations on land to be covered by the Notice Leases and Agreements

13. Approximate acreage to be disturbed:

A)	Mining Operation Area - (include operations, storage, & disposal area)	34.0	acres
B)	Access Road or Haulageway -	1.0	acres
C)	Drainage System -	.5	acres
	TOTAL ACRES:	35.5	

14. Give the names and post office addresses of every principal Executive, Officer, Partner, (or person performing a similar function) of Applicant:

	Name:	Title:	Address:
a.	SEE EXHIBIT C		
b.			
c.			
d.			

15. Has Applicant, any subsidiary or affiliate or any person, partnership, association, trust, or corporation controlled by or under common control with Applicant, or any person required to be identified by Item 14, ever had an approval of a Notice of Intention withdrawn or has surety relating thereto ever been forfeited? ( ) Yes (X) No

If yes, explain:

STATE OF Colorado

COUNTY OF Mesa

I, D. M. Pembridge, having been duly sworn depose and attest that all of the representations contained in the foregoing application are true to the best of my knowledge; that I am authorized to complete and file this application on behalf of the Applicant and this application has been executed as required by law.

Signed: D M Pembridge

Taken, subscribed and sworn to before me the undersigned authority in my said county, this 13th day of December, 19 78.

Notary Public: Gloria F. Tappan

My Commission Expires: 6-14-82

PLEASE NOTE:

Section 40-8-13(2) of the Mined Land Reclamation Act provides as follows:

> "Information relating to the location, size, or nature of the deposit and marked confidential by the operator, shall be protected as confidential information by the Board and the Division and not be a matter of public record in the absence of a written release from the operator, or until the mining operation has been terminated as provided in subsection (2) of section 40-8-21."

Is confidential information contained herein?

YES X (Initial)

NO _____ (Initial)

Sections desired to be maintained as confidential information -

Location _____ _____

_____ _____ _____

_____ _____ _____

MINING APPLICATION NO. _____

HECLA SHAFT

Date _____

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
1588 West North Temple
Salt Lake City, Utah 84116

MINING AND RECLAMATION PLAN
(Other forms may be used in lieu of MR 2, provided they contain the same information)

1. Name of Applicant or Company Union Carbide Corporation, Grand Junction, CO.
2. Proposed type of operation Underground Uranium - Vanadium
3. (a) Prior Land Use(s) Dry Rangeland
   (b) Current Land Use(s) Gravel Pit and Dry Rangeland
   (c) Possible or Prospective Future Land Use(s) Dry Rangeland
4. What vegetation exists on the land proposed to be affected Pinyon-Juniper Sagebrush, Rabbit Brush, Russian Thistle
   (a) Types and Estimated Percent cover or density: Disturbed area 0-5% undisturbed 10-15
5. What is the pH range of soil before mining? 7.6 - 8.5 pH
   Name of Person or Agency and method of determining pH USDA Soil Conservation Service Soils Map. *Waste rock expected to be approximately 7.8 - 8.0
6. Site elevation above sea level 6400 - 6600
7. In case of coal, oil shale, and bituminous sandstone:
   Principal seam(s) and thickness(es) DNA
8. Estimated duration of mining operations 10 - 15 years
9. Has overburden, waste or rejected materials been classified as acid or alkali producing? ( ) Yes (X) No
   Does the above material being moved have any other characteristics affecting revegetation? nutrient deficient
10. Will any underground workings or aquifers be encountered? ( ) Yes (X) No
    Describe _____
    Is there an active discharge of water from abandoned deep mines on or crossing the land affected? ( ) Yes (X) No If yes, describe the quality of water being discharged. _____

11. Describe specifically a detailed procedure for:
    (a) The mining sequence
    (b) The procedure for constructing and maintaining access roads, to include a typical cross-section and a profile of the proposed road grades.
    (c) The procedure for site preparation including removing trees and brush.
    (d) The method for removing and stockpiling topsoil or disturbed materials.
    (e) The method for the placement or containment of all disturbed materials, to include the method for handling of all acid or alkali-producing and toxic materials.
    (f) A procedure for final stabilization of disturbed materials.

GRADING AND REGRADING

Specifically describe:

(a) Typical cross-section of regrading.
(b) The method of spreading topsoil or upper horizon material on the regraded area and indicate the approximate thickness of the final surfacing material.
(c) What type of soil treatment will be utilized.
(d) The method of drainage control for the final regraded area.
(e) Maximum grading slope.

TESTING

1. Describe method for testing stability of reclamation fill material.

observation of waste dumps

Describe method for the testing of soil that is intended to support vegetation

soil analysis and revegetation studies

2. Describe any soil treatment employed as an aid to revegetation none

are planned at this time. Soil ammendments may be used at a later date.

3. Describe surface preparation of areas intended to support vegetation:

Round off outside edges of waste dumps and pads, scarify compacted surfaces,

redistribute any salvaged topsoil and seed

REVEGETATION

1. Revegetation to be completed by:

(X) Operator
( ) Soil Conservation District
( ) Private Contractor
( ) Other (specify) _____

( ) Hydroseeding
( ) Aerial Seeding
( ) Conventional or Rangeland Drill
( ) Broadcast and Drag
(X) Other Broadcast and Drag Cover

2. Will Mulch be used? ( ) Yes (X) No

Type: _____ Rate/Acre _____ lbs.

3. Revegetation Plan and Schedule -

Species	Rate/ Acre	Planting Location	Facing N-S-E-W	Season to be replanted
Intermediate Wheatgrass	4 #/ac	All Locations	S and SE	Preferably Fall
Crested Wheatgrass	1 #/ac	All Locations	S and SE	Preferably Fall
Four Wing Salt brush	1 #/ac	All Locations	S and SE	Preferably Fall
Yellow Sweet Clover	1 #/ac	All Locations	S and SE	Preferably Fall
Smooth Brome	4 #/ac	All Locations	S and SE	Preferably Fall

4. Will affected area be subject to livestock or wildlife grazing?

(X) Yes ( ) No Will vegetation protection be needed? No, grazing pressure does not warrant vegetation protection

5. Will irrigation be used: ( ) Yes (X) No Type _____

6. Describe maintenance procedures for revegetation if needed, until surety release is granted. Monitoring and reseeding if necessary

STATE OF Colorado

COUNTY OF Mesa

I, D. M. Pembridge, having been duly sworn depose and attest that all of the representations contained in the foregoing application are true to the best of my knowledge; that I am authorized to complete and file this application on behalf of the Applicant and this application has been executed as required by law.

Signed: D. M. Pembridge

Taken, subscribed and sworn to before me the undersigned authority in my said county, this 13th day of December, 19 78.

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Is confidential information contained herein?

YES X (Initial)

NO _____ (Initial)

Sections desired to be maintained as confidential information -

Location _____ _____

Size _____ _____

Nature of Deposit _____ _____

HECLA SHAFT

MINING PLAN

The uranium ore occurs in the Salt Wash sandstone member of the Morrison Formation six to nine hundred feet below the surface. Mining will be conducted in a sound technical and prudent miner-like fashion utilizing a random-room and pillar technique.

A single concrete-lined shaft entry is proposed in the NE¼ of Section 5, T29S-R24E for 1979. Development headings will then be driven to the east and to the west. A seven foot diameter venthole will be drilled and lined in 1980 to serve also as a second escapeway. At least five or more ventholes 5, 7, or 8 feet in diameter are anticipated during the life of the mine. **(See Figure 5)**

The shaft site and main ancillary facilities will be located in an abandoned gravel pit. Some earth moving will be necessary to accomodate the construction of these surface facilities. Since the surface is already disturbed very little vegetation or topsoil will be affected. However, topsoil will be stock piled and stabilized where practical in these and future construction operations.

Waste rock generated from mine development will consist of sandstone and mudstones and will be deposited in the old gravel pit workings to the east. When this area is filled, mine waste will be deposited to the south of the shaft following a natural depression to the southwest. Where practical topsoil affected by site expansion will be salvaged and stock piled.

Normal "over the edge" waste dumping will tend to naturally sort the waste materials with the larger rock materials rolling to the bottom, thus forming a free draining waste pile with an observed angle of repose of 35 deg. Past experience indicates that slope stability should not be a problem.

The waste rock is expected to be similar to that of the La Sal - Snowball. Testing by Colorado State University found the La Sal - Snowball mine wastes to

be capable of supporting salt tolerant vegetation, with a ph of 7.8 and to be low only in phosphous with the trace elements present.

There are no natural water bodies in the area other than epherneral drainage channels. Some ditching may be necessary to reroute a meandering drainage channel around the proposed waste dump in the old pit area east of the shaft.

The shaft site is located a few hundred feet away from Utah Highway 46 and will be serviced by rebuilding the existing pit access road. Some access roads may be constructed or rebuilt to service future ventilation sites. All roads built or modified will be constructed so as to insure proper drainage and erosion control.

HECLA SHAFT

RECLAMATION

Upon final abandonment of the mine, surface debris, scrap metal, discarded wood and other materials will be buried or removed from the site. The headframe, buildings and other surface facilities will be dismantled and removed. The shaft and ventilation holes will be sealed with suitable concrete-steel covers to prevent accidental or unauthorized entry.

Dumps, pads, and other disturbed areas will be stabilized. Stabilization will consist of rounding of the outer edges of the dumps and pads, reducing the slope of waste rock faces and regrading of drainage contours on the affected areas. Topsoil and overburden will be spread back over these areas where possible. Roads will be graded to match the existing topography.

Compacted surfaces will be scarified, and seeded as recommended and then drag covered. Seeding will preferably take place in the fall. At present there are no plans for the addition of a fertilizer. However, should revegetation tests prove soil amendments significantly helpful in establishing vegetation, then amendments and other proven surface techniques will be employed.

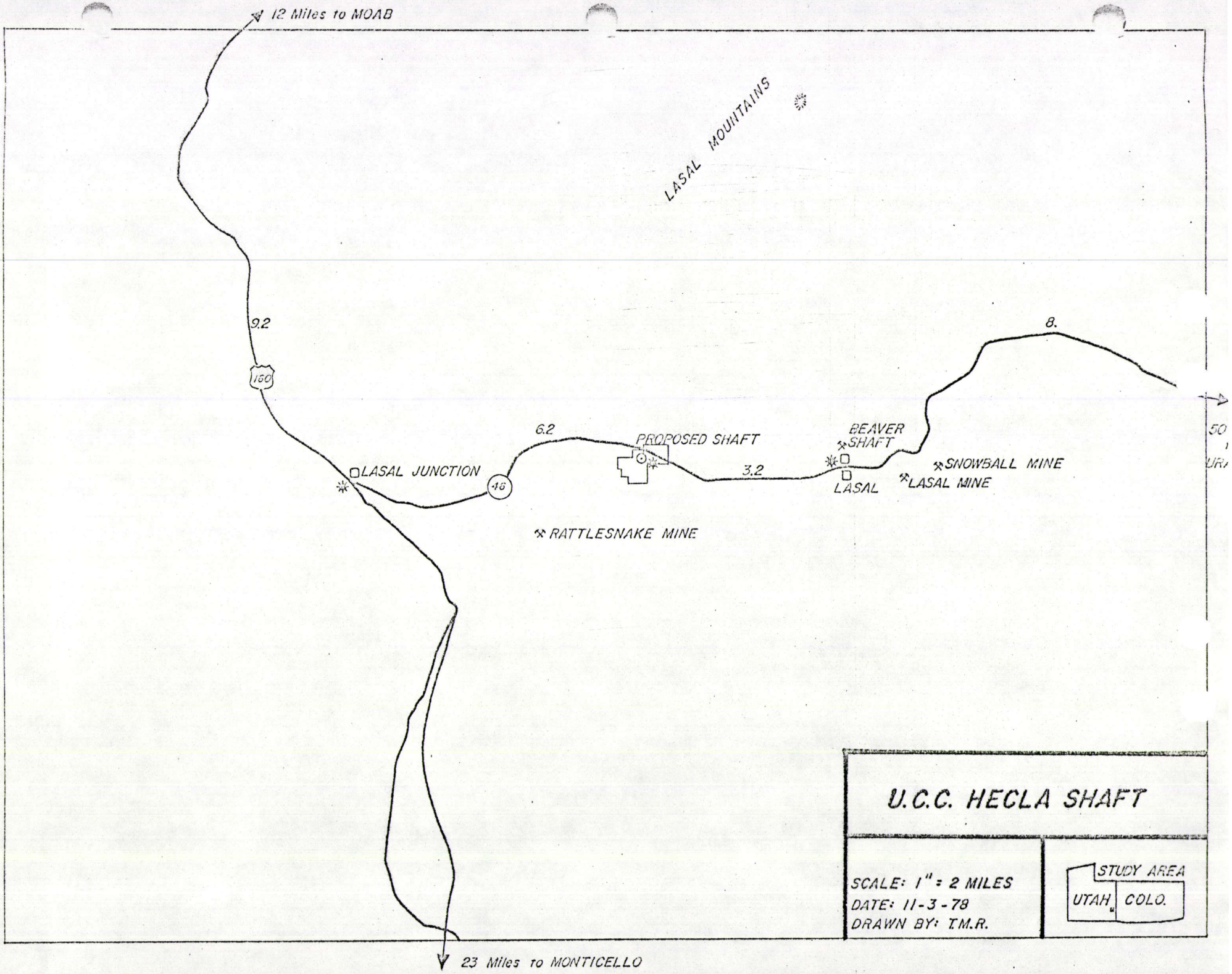
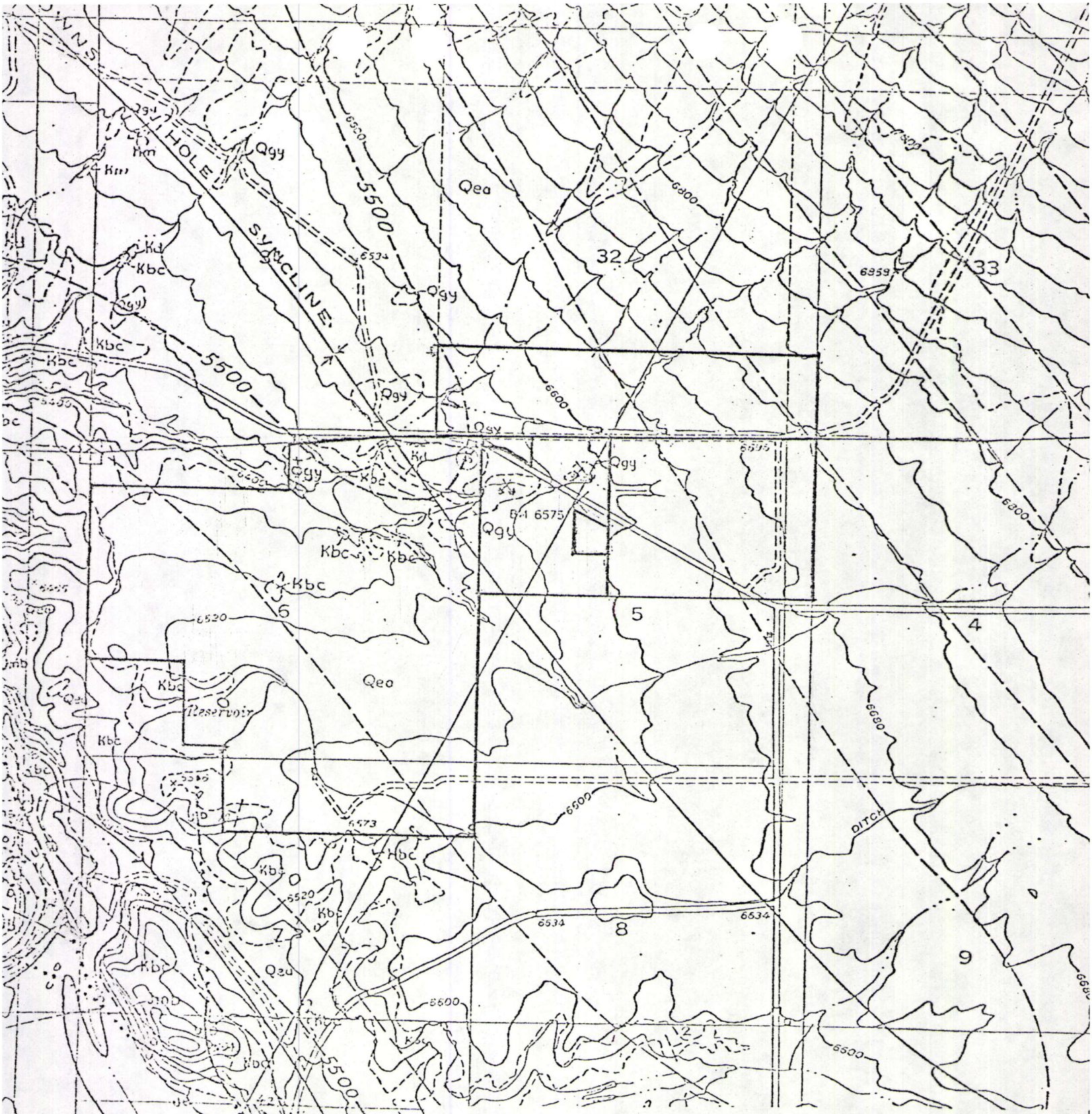

12 Miles to MOAB
LASAL MOUNTAINS
9.2
160
8.
6.2
PROPOSED SHAFT
BEAVER SHAFT
LASAL JUNCTION
46
3.2
SNOWBALL MINE
LASAL
LASAL MINE
RATTLESNAKE MINE
23 Miles to MONTICELLO
U.C.C. HECLA SHAFT
SCALE: 1" = 2 MILES
DATE: 11-3-78
DRAWN BY: T.M.R.
STUDY AREA
UTAH
COLO.

FIGURE 1



MOUNT PEALE 2 SE QUAD

By

G. W. Weir, C. L. Dodson, and W. P. Puffett

SCALE 1:24 000 **FIGURE 2**

1 ½ 0 1 MILE

CONTOUR INTERVAL 40 FEET
DATUM IS MEAN SEA LEVEL

1960

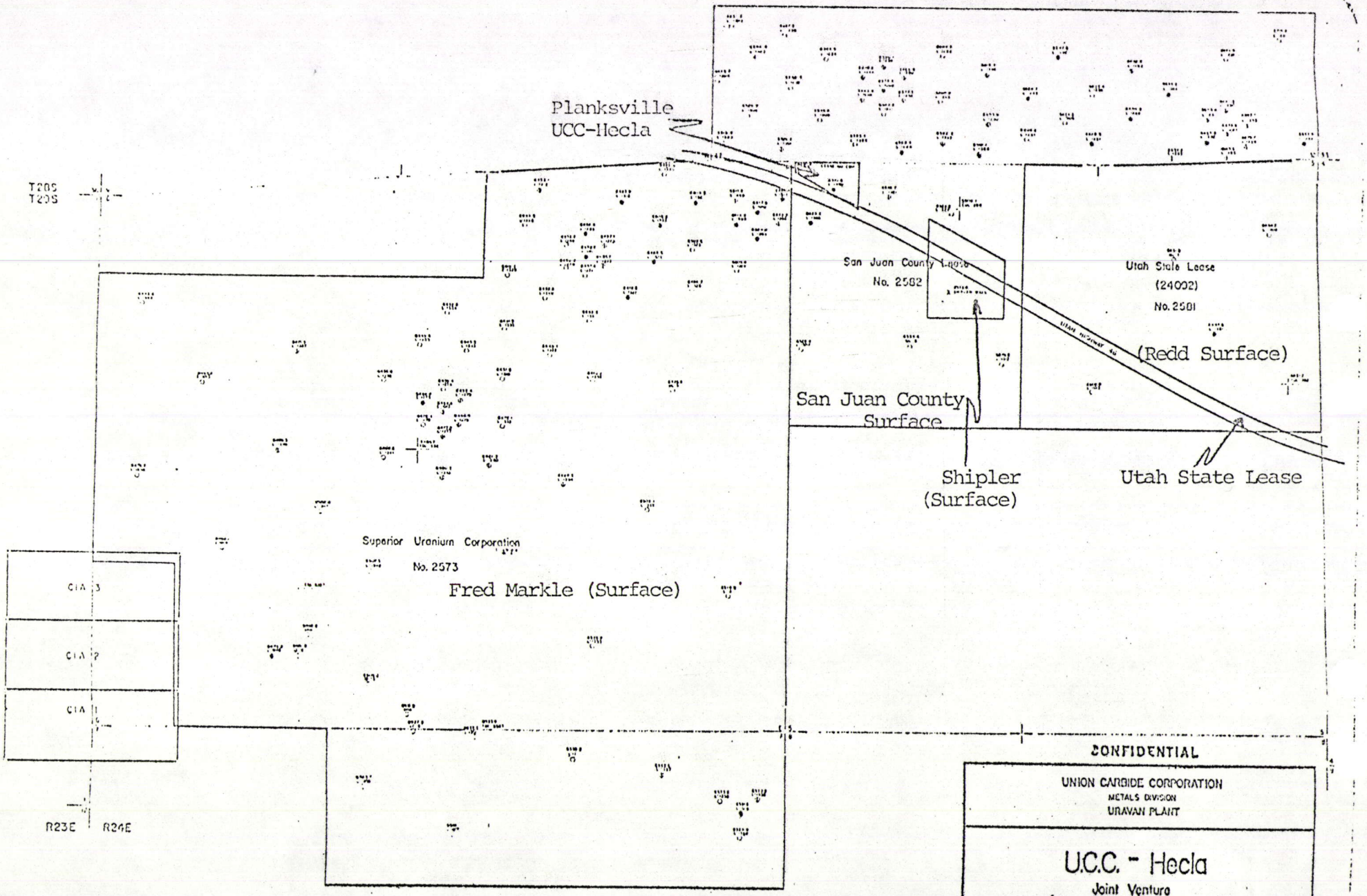


FIGURE 3

EXHIBIT "B" SURFACE OWNERS

CONFIDENTIAL

UNION CARBIDE CORPORATION
METALS DIVISION
URAVAN PLANT

U.C.C. - Hecla
Joint Venture

SCALE 1" = 500'
DRAWN BY J. L. KLOTZBACH
DATE 5/5/70

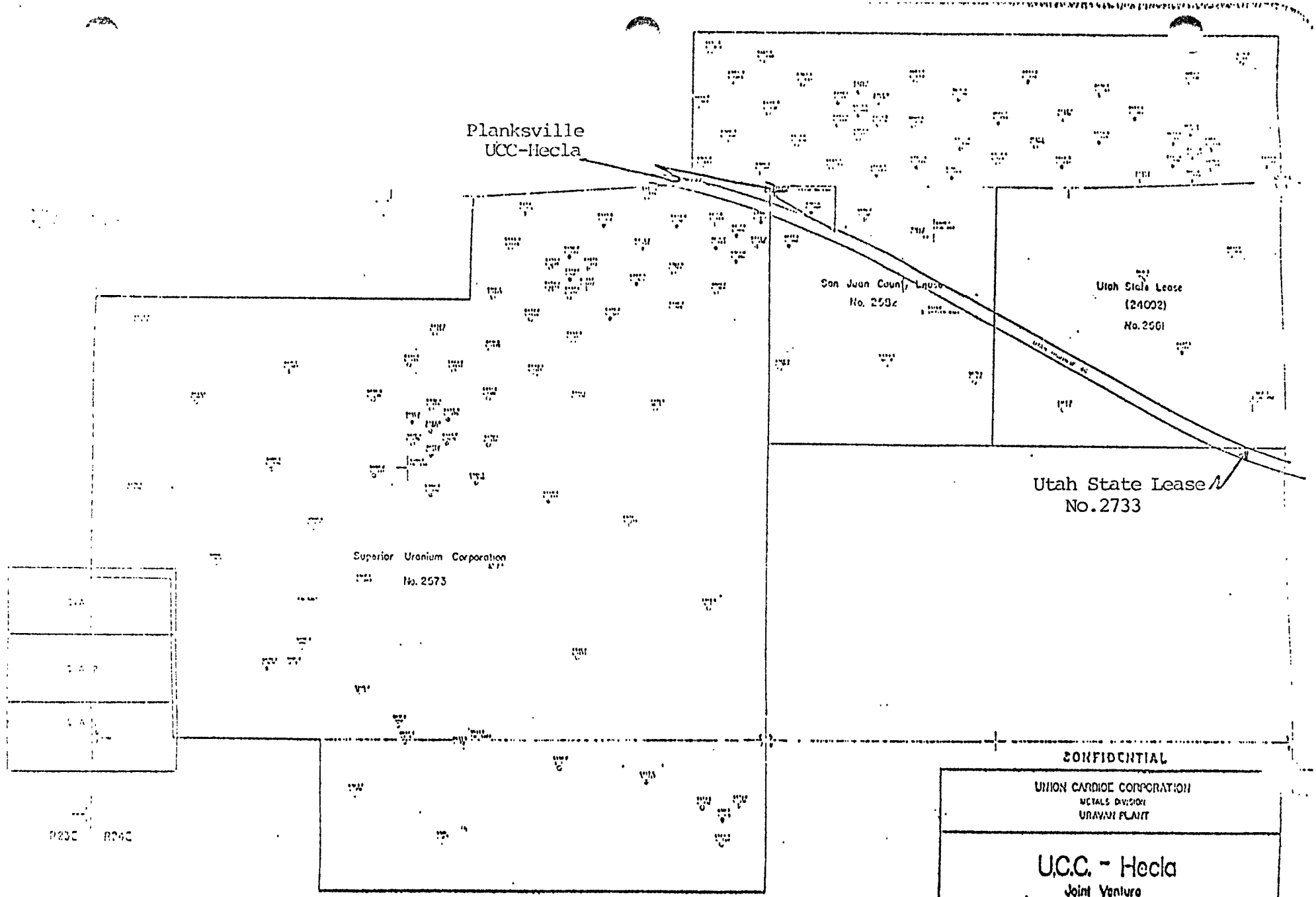


FIGURE 4

EXHIBIT "A" MINERAL OWNERSHIP

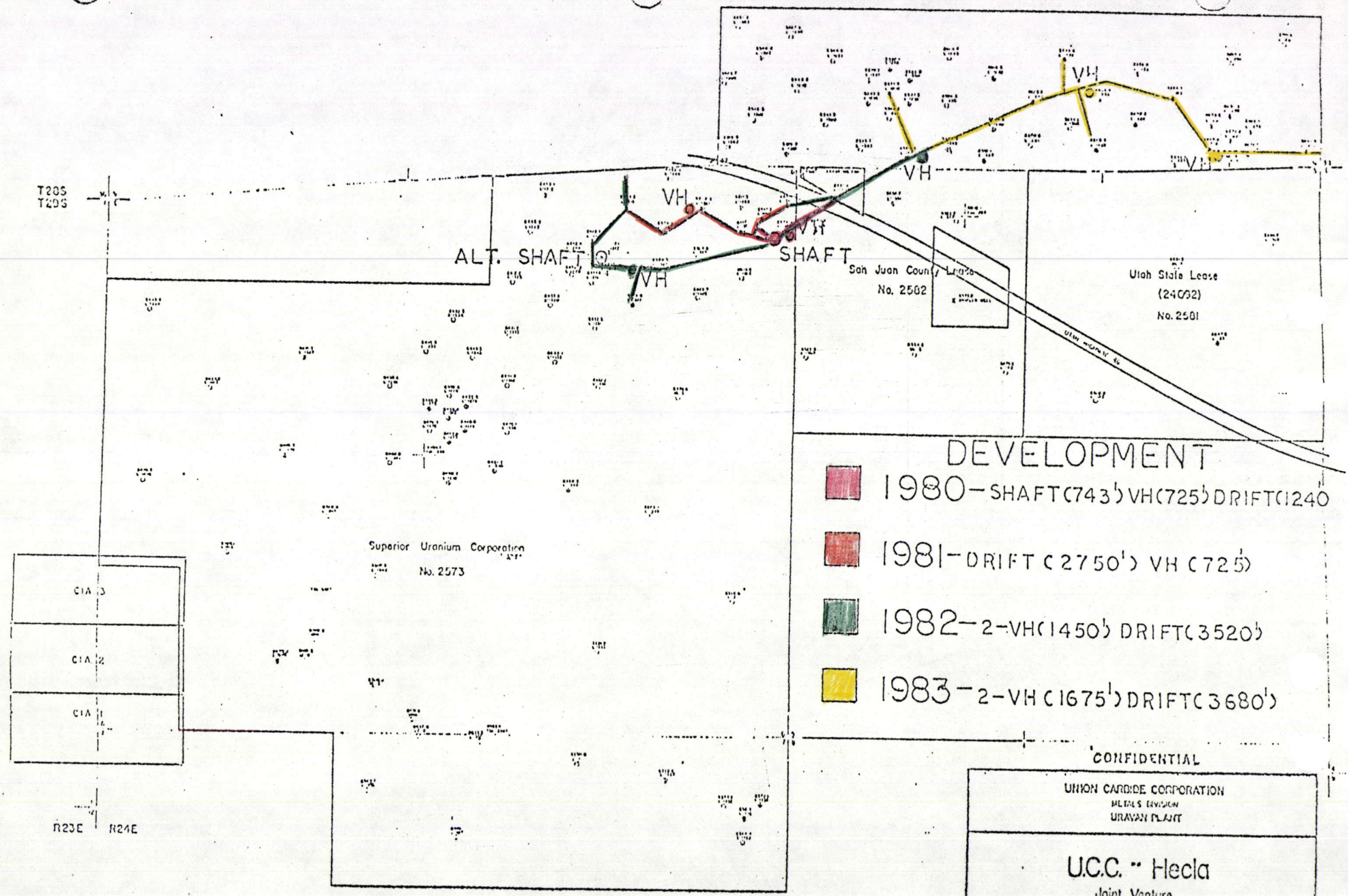
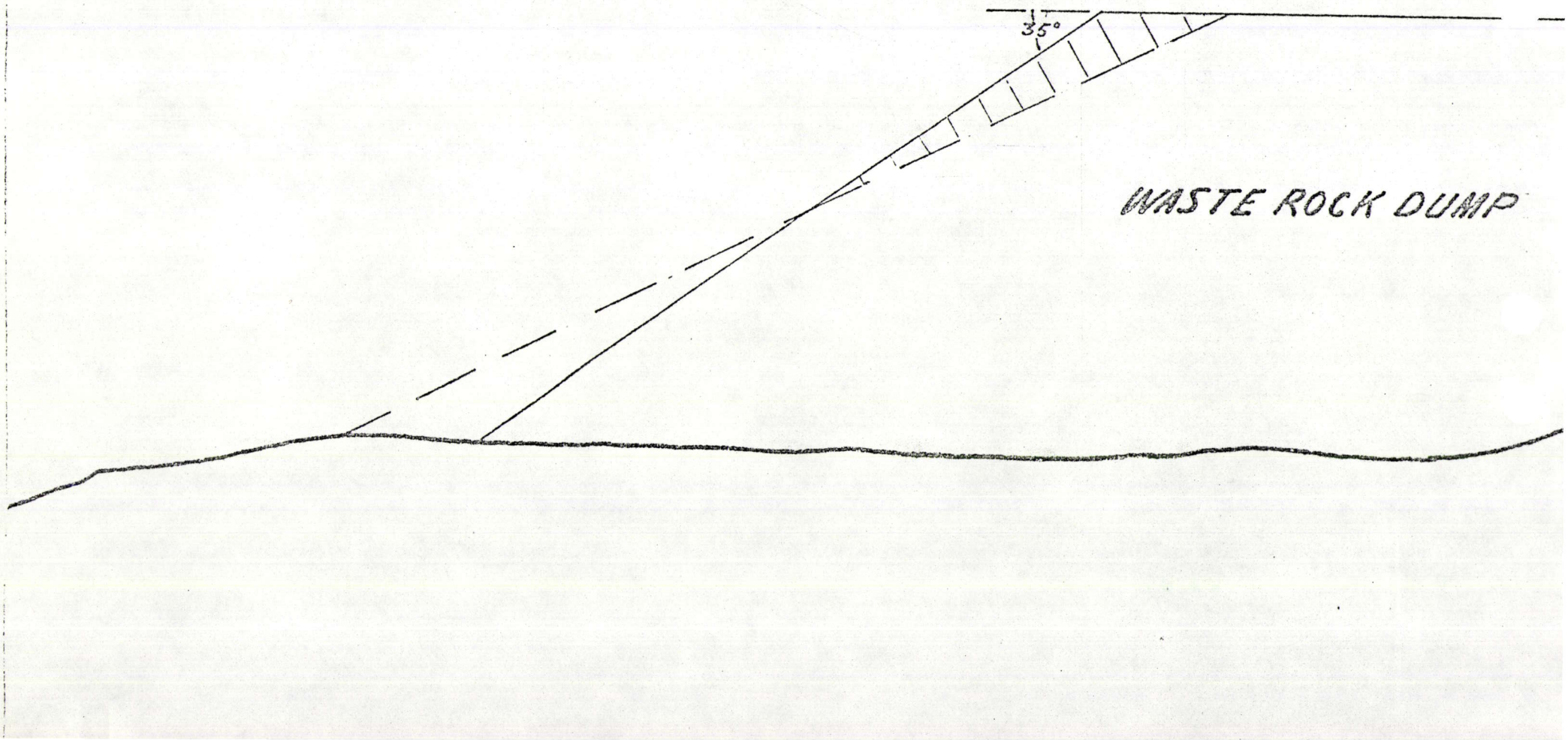


FIGURE 5

DEVELOPMENT SCHEDULE

TYPICAL CROSS SECTION OF REGRADED AREA

NO SCALE



UNION CARBIDE CORPORATION

METALS DIVISION

William S. Sneath
Chairman of the Board &
Chief Executive Officer

Warren M. Anderson
President & Chief Operating Officer

Alec Flamm
Senior Vice-President

Fred C. Kroft, Jr.
Vice-President & President, Metals Division

R. L. Folkman
Executive Vice-President, Metals Division

O. J. Malacarne
General Manager, Mining & Milling

D. M. Pembridge
Manager, Plateau Operations

EXHIBIT C